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No. 06-109

Supreme Court, U.S.
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In The
Supreme Court of the United States

WESLEY SMITH,

Petitioner,

vs.

BROOKSHIRE BROTHERS, INC.,

Respondent.

On Petition For Writ Of Certiorari To The First District Court Of Appeals, Houston, Texas

BROOKSHIRE BROTHERS' RESPONSE TO WESLEY SMITH'S PETITION FOR WRIT OF CERTIORARI

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QUESTIONS PRESENTED

1. Whether the State of Texas First District Court of Appeals' Opinion that Material Data Safety Sheets (MSDS) are not a reliable source, by themselves, to establish legal causation in a negligence action is an issue limited to the jurisprudence of the State of Texas?

2. Whether the Petitioner has met his burden of establishing Federal Question Jurisdiction?

3. Whether the State of Texas First District Court of Appeals' determination that Dr. Gary Friedman's testimony was unreliable is based solely on the unreliability of MSDS?

4. Whether the State of Texas First District Court of Appeals' Opinion that MSDS are not sufficient to establish general causation in a civil chemical exposure case is significant Federal issue?

5. Whether MSDS are reliable for use in proving general legal causation in a civil chemical exposure case?

6. Whether there is a sufficient record for the Supreme Court to determine if the specific MSDS relied upon by Dr. Gary Friedman is reliable scientific evidence?

CORPORATE DISCLOSURE STATEMENT

Brookshire Brothers, Inc. no longer exists. The successor entity is Brookshire Brothers, Ltd. which is a limited partnership between Brookshire Brothers Management, Inc. (a Texas Corporation) and Brookshire Brothers Investment, Inc. (a Nevada Corporation). Neither is a publicly traded company.

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STATEMENT OF THE CASE

Brookshire Brothers is dissatisfied with Wesley Smith's statement of the case and, as such, presents the following for the court's consideration.

Wesley Smith brought suit against Brookshire Brothers for injuries he claims to have suffered from exposure to household cleaners. Brookshire Brothers is a grocery company with locations in Texas and Louisiana. Brookshire Brothers has chosen not to subscribe to the Texas Workers' Compensation System. Smith was employed at Brookshire Brothers' Corrigan, Texas location as a part of the night cleaning crew. On September 12, 1995, he was asked to clean the walls of the bakery. Smith claims that he was given multiple household cleaners which he used to clean the bakery walls. Smith alleges that the mixture of cleaners caused irritation to his eyes, throat and mouth. According to Smith, this irritation led to the development of reactive airways dysfunction syndrome (RADS). Smith has never been able to clearly identify the amount of the household cleaners he used and the duration of his alleged exposure to the chemicals.

Wesley Smith sued Brookshire Brothers on September 9, 1997. Smith asserted Brookshire Brothers was negligent in failing to provide a safe workplace and that Brookshire Brothers' conduct was grossly negligent, intentional and/or consciously indifferent. Smith sought damages for his alleged condition and punitive damages.

At trial, Wesley Smith's counsel read the deposition testimony of Dr. Gary Friedman. Dr. Friedman relied almost solely upon MSDS for some of the household cleaners allegedly employed by Wesley Smith. For the

other cleaners, which he could not locate MSDS, he relied upon the manufacturer's product label.

The First District Court of Appeals, citing to *Moore v. Ashland Chemical, Inc.*, 151 F.3d 269, 278 (5th Cir. 1998) and *Coastal Tankships, U.S.A., Inc. v. Anderson*, 87 S.W.3d 591, 611 (Tex. App. – Houston [1st Dist.], 2002), correctly found that Dr. Friedman's reliance on MSDS, without additional scientific support, was unreliable and therefore, constituted no evidence. Without Dr. Friedman's testimony, Wesley Smith had no evidence of the causal link between his alleged exposure to the household cleaners and his alleged medical condition, Reactive Airways Dysfunction Syndrome (RADS).

SUMMARY OF THE ARGUMENT

The decision of the First Court of Appeals from Houston, Texas is a matter of Texas Jurisprudence. The State of Texas has held that reliance on scientific studies whose foundation is experiments conducted on animals or exposure of animals to certain substances is inherently unreliable. This holding is particular to the State of Texas and is not a federal issue.

The Petitioner, Wesley Smith, fails to establish a real conflict between the First District Court of Appeals' opinion in *Brookshire Brothers, Inc. v. Smith* and any Federal Circuit Courts of the United States or any State Court of last resort. Likewise, he has failed to establish the First District Court of Appeals' opinion conflicts with a relevant decision of the United States Supreme Court or that the First District Court of Appeals' opinion decided an important question of Federal law.

The First District Court of Appeals' decision was based on more than MSDS were unreliable scientific evidence. In fact, Dr. Friedman also relied upon medical records, the patient's history and manufacturer labels, all deemed to be unreliable, in combination with the MSDS and by themselves, to support Dr. Freidman's causation opinion.

The authorities and the underlying regulations establish that MSDS are not scientifically reliable. The reliance on a single animal study, the medical community's hesitancy to rely on MSDS due to the manufacturer/ author's history of providing only part of the data or inaccurate data, does not make MSDS a reliable basis for a scientific opinion to support general causation. Finally, the underlying record on appeal does not furnish sufficient information upon which a court could determine the tests performed by the MSDS author or even what the MSDS at issue says.

For these reasons, the Honorable United State Supreme Court should deny the Petition for Writ of Certiorari.

REASONS THE PETITION SHOULD BE DENIED

I. The Highest Court of the State of Texas declined to address the issue

On January 27, 2006 the Texas Supreme Court *denied* the Petitioner's Petition for Review. (Appendix 1, App. 1). The Texas Supreme Court later denied a Motion for Rehearing. (See Petitioner's Petition App. C). The Texas Rules of Appellate Procedure provide that:

> "'Denied.' If the Supreme Court is not satisfied that the opinion of the court of appeals has correctly stated the law in all respects, but determines that the petition presents no error that requires reversal or that is of such importance to the jurisprudence of the state as to require correction, the Court will deny the petition with the notation 'Denied'" Tex. R. App. P. 56.1(b)(1).

A petition for review which is *refused* is equivalent to an opinion issued by the Texas Supreme Court and possesses the same precedential value as an opinion issued by the Texas Supreme Court. The disposition by the Texas Supreme Court of the Petitioner's Petition for Review of the First District Court of Appeals' May 13, 2004 opinion establishes that the opinion of the First District Court of Appeals lack any significant merit within the jurisprudence of the State of Texas. The reason is that Texas law already recognizes that epidemiological studies, which Dr. Gary Friedman failed to cite, based upon research conducted on animals is unreliable. *Merrell Dow Phamaceuticals, Inc. v. Havner*, 953 S.W.2d 706, 728-729 (Tex. 1997) and *Minnesota Mining & Manufacturing Co. v. Atterbury*, 978 S.W.2d 183, 199 (Tex. App. – Texarkana, 1998). The Occupational Safety & Health Administration (OSHA) requires chemical manufacturers to make a health hazard determination and issue a MSDS based upon this determination. 29 C.F.R. § 1910.1200(d)(2). The regulations give the manufacturers guidance as to what types of studies may be examined and used in making the health hazard determination in Appendix A and B which are attached to the regulations. (Appendix 2, App. 4-6 & Appendix 3, App. 9-10).[1] In determining whether a product is a carcinogen,

[1] Both Appendix 2 & 3 were attached as Appendix G1 and G2 to Smith's Petition for Review to the Texas Supreme Court.

corrosive, highly toxic, irritant, or toxic, a chemical manufacturer is permitted to examine and **base** this determination on a single *animal* study. (Appendix 2, App. 5). Texas law has specifically held that reliance upon animal studies is not sufficient to establish legal causation in a court of law. Texas also requires the epidemiological studies presented in support of a general causation opinion demonstrate that exposure to the chemical should double the risk of contracting the medical condition at issue. *Merrell Dow Phamaceuticals, Inc. v. Havner*, 953 S.W.2d 706, 717-718 (Tex. 1997). Federal Regulations pertaining to MSDS do not specify any ratio of risk. These holdings and requirement are particular to Texas Jurisprudence.

Even though the First District Court of Appeals' decision does touch on federally required MSDS, this honorable court should exercise its discretion and deny the petition for writ of certiorari because this is a matter that falls within the province of Texas Jurisprudence. See *Maryland v. Baltimore Radio Show, Inc.*, 338 U.S. 912, 70 S. Ct. 252, 94 L. Ed. 562 (1950) (Court permitted to deny review of State court proceeding even though it involved issue of federal law).

II. The Petitioner has failed to establish a conflict with any reported opinions

Since the Texas Supreme Court denied the petition for review, Smith cannot meet Supreme Court Rule 10(b) requirement that the "state court of last resort" decide an important issue which conflicts with Federal Circuit Court of Appeals' decisions or other State Courts' of last resort

opinions. As such, Smith's claim of jurisdiction under Supreme Court Rule 10(b) fails.

However, Brookshire Brothers still believes it is important to show this court that the opinions cited by Smith as conflicting with the First District Court of Appeals' opinion are factually distinguishable. First, the First District Court of Appeals' opinion does not possess the broad holding that Petitioner claims. (Petitioner's Petition, Pg. 7). The opinion does not hold that MSDS are not reliable scientific evidence. The opinion merely states that *MSDS by themselves* are not reliable scientific evidence. (See Petitioner's Petition App. A11-A14). The Petitioner ignores footnote seven of the opinion when he claims that the First District Court of Appeals' opinion conflicts with *Curtis v. M&S Petroleum*, 174 F.3d 661 (5th Cir. 1999). The First District Court of Appeals references petitioner's reliance on the opinion in his motion for rehearing and distinguishes *Curtis* from the case at hand. In particular, the expert in *Curtis* was relying upon other scientific studies establishing a causal link between the chemical and the disease suffered by the plaintiffs. *Ibid.*, 669-670. Here, the First District Court of Appeals correctly determined that Dr. Friedman was not relying upon any scientific studies, but relied solely on the MSDS and manufacturer labels. Clearly, there is no conflict between the opinion in *Curtis* and the First District Court of Appeals' opinion.

The Petitioner also cites to *Westerberry v. Gislaved Gummi AB*, 178 F.3d 257 (4th Cir. 1999) as an opinion which conflicts with the First District Court of Appeals opinion. First, the *Westerberry* court never held that MSDS are reliable scientific evidence by themselves. The *Westerberry* Court stated that MSDS provided by the defendant,

the defendant's own opening argument and the defendant's expert's testimony established that exposure to talc in sufficient quantities could cause irritation to mucous membranes. *Ibid.*, 264-265. In fact, the defendant in *Westerberry* took the position at trial that talc could cause irritation to mucous membranes but that the plaintiff had not been exposed to a sufficient quantity. *Ibid.*, 265 n. 2 Here, the First District Court of Appeals did not face a situation where it was conceded by the Defendant at trial (Respondent herein) that exposure to the chemicals at issue would cause RADS. As such, there is no conflict between the First District Court of Appeals opinion and *Westerberry*.

The Petitioner also cites to *McCullock v. H.B. Fuller Co.*, 61 F.3d 1038 (2nd Cir. 1995) as a case that holds contrary to the First District Court of Appeals. First, as stated above, the First District Court of Appeals found that MSDS are not reliable scientific evidence of general causation by themselves. Likewise, *McCullock* did not hold that MSDS are reliable scientific evidence by themselves. The physician in *McCullock* relied upon the plaintiff's medical records, her medical history, pathological studies and reference to scientific and medical treatises in combination with MSDS was a sufficiently reliable method. Dr. Friedman did not rely on any pathological studies or any medical or scientific treatises in coming to his opinions. Contrary to the Petitioner's representation, McCullock does not conflict with the First District Court of Appeals opinion.

"Certiorari is only granted 'in cases involving principles the settlement of which is of importance to the public as distinguished from that of the parties, and in cases where there is a real and embarrassing conflict of opinion

and authority among the circuit courts of appeal.'" *National Labor Relations Board v. Pittsburgh Steamship Co.*, 340 U.S. 498, 502, 71 S. Ct. 453, 456, 95 L. Ed. 479, 482 (1951) (citing *Layne & Bowler Corp. v. Western Well Works*, 261 U.S. 387, 393, 43 S. Ct. 422, 67 L. Ed. 712 (1923)). There is no "real and embarrassing" conflict between the First District Court of Appeals' decision in *Brookshire Brothers, Inc. v. Smith* and the three federal circuit courts of appeal discussed above and cited to by Smith.

III. The reliance on MSDS was not the sole reason Dr. Friedman's testimony was unreliable.

The question presented before the court, whether MSDS are reliable scientific evidence upon which to base a causation opinion, would not, if it was determined that MSDS are reliable, lead to a determination that Dr. Gary Friedman's testimony was reliable. The First District Court of Appeals found Dr. Friedman's opinion to be unreliable for the following reasons:

(1) Reliance on the commercial cleaner's labels;

(2) Reliance on the patient's medical records and history of the event;

(3) Failure to rely upon any peer review articles;

(4) And failure to cite one epidemiological study in support of his opinion. (Smith's Petition, Appendix A, A9-A14).

In fact the First District Court of Appeals never asserts that MSDS are unreliable scientific evidence. The court merely stated that MSDS, "standing alone" do not provide

"the type of specific detailed showing of scientific reliability required to accord evidentiary value to an expert's opinion."-(Smith's Petition, Appendix A, A11). Stated differently, MSDS, by themselves, are not sufficient scientific evidence upon which to base a general causation opinion in a chemical exposure case. In the underlying appeal, Smith attempted to use *Curtis v. M&S Petroleum*, 174 F.3d 661 (5th Cir. 1999) as support for his proposition that MSDS are reliable scientific evidence. However, the First District Court of Appeals was able to appreciate the distinction between the scientific materials relied upon by Dr. Friedman and those relied upon by the *Curtis* expert. Dr. Frank Stevens relied on MSDS *and:*

(1) Epidemiological Studies published by the U.S. Department of Health and Human Services;

(2) The U.S. Supreme Court's Opinion in *Industrial Union v. American Petrol. Inst.*, 448 U.S. 607, 100 S. Ct. 2844, 65 L. Ed. 2d 1010 (1980) which discusses multiple studies on the effects of exposure to benzene;

(3) And the OSHA standard on benzene. *Ibid.*, 669-670.

The First District Court of Appeals does not hold that MSDS are unreliable scientific evidence as alleged by Smith. The MSDS at issue did not provide the data necessary to determine if they were reliable. Specifically, there was no evidence of the tests upon which the MSDS based its findings that exposure to the chemicals could cause RADS. (Smith's Petition Appendix A, A11-A12). Smith fails to appreciate the fact that if Dr. Friedman had relied upon more than just the MSDS, if Dr. Friedman had scientific

studies which supported his conclusions, then his testimony and conclusions could have met reliability standards under Texas law.

IV. There is no significant public outcry about the First District Court of Appeals' opinion.

Courts have held well before the First District Court of Appeals' May, 2004 opinion that MSDS, by themselves, are not reliable scientific evidence. In 1998, the Fifth Circuit Court of Appeals, a court whose opinions carry significant precedential value in federal courts in the states of Texas, Louisiana, and Mississippi, held that MSDS, by themselves, were not sufficient scientific material upon which to base a causation opinion. *Moore v. Ashland Chemical, Inc.*, 151 F.3d 269, 278 (5th Cir. 1998) and *Coastal Tankships, U.S.A., Inc. v. Anderson*, 87 S.W.3d 591, 611 (Tex. App. – Houston [1st Dist.], 2002) n. 32. There was no documented public outcry over the Fifth Circuit's opinion in the three states it affected. Smith neglects to advise the court that this is not the first time that the First District Court of Appeals has ruled that MSDS are not reliable scientific basis by themselves. In *Coastal Tankships, U.S.A., Inc. v. Anderson*, 87 S.W.3d 591, 611 (Tex. App. – Houston [1st Dist.], 2002), the First District Court of Appeals, in an en banc opinion, found that MSDS, in combination with other unreliable data, could not be used to establish causation. Again, there was no public outcry about the First District Court of Appeals' opinion. Now, a panel of three justices from the First District Court of Appeals issues an opinion, which comes to the same conclusion as *Coastal Tankships* and there is suddenly an outcry, admittedly limited to Houston, Texas. One has to ask where was the concern of Dr. Wayne

Snodgrass and the Houston Hazardous Materials Response Team in 1998 and 2002 when the Fifth Circuit Court of Appeals and the First District Court of Appeals authored opinions with the exact same conclusion as the three judge panel of *Brookshire Brothers, Inc. v. Smith*. It is also strange that the public outcry is limited to Houston, Texas. (Smith's Petition Appendix D, E & F). Not only is there no public outcry from outside Texas, but the concern is limited to Houston, no amicus briefs from Dallas, Austin or San Antonio. The reason is clear. The First District Court of Appeals' opinion has little impact on anyone within the relevant medical community.

The same person who forwarded the First District Court of Appeals opinion to Dr. Snodgrass and the Houston Hazardous Materials Team would have also done well to have educated them as to the difference between applying MSDS in Dr. Snodgrass' and Emergency Medical fields and application in establishing causation in a court of law. Smith, Dr. Snodgrass and the Houston Hazardous Materials Team fail to understand, after exhaustive briefing of this subject at the First District Court of Appeal and the Texas Supreme Court, the purpose of the legal system. "Our legal system requires that claimants prove their cases by a preponderance of the evidence. In keeping with this sound proposition at the heart of our jurisprudence, the law should not be hasty to impose liability when scientifically reliable evidence is unavailable." *Merrell Dow Pharmaceuticals, Inc. v. Havner*, 953 S.W.2d 706, 728 (Tex. 1995). "[T]he law must balance the need to compensate those who have been injured by the wrongful actions of another with the concept deeply imbedded in our jurisprudence that a defendant cannot be found liable for an

injury unless the preponderance of the evidence supports cause in fact." *Ibid.*, 718.

V. MSDS are not reliable scientific evidence when solely used to support a causation opinion.

Courts commonly refer to two types of causation in toxic tort cases, general and specific causation. *Minnesota Mining and Manufacturing Company v. Atterbury*, 978 S.W.2d 183, 199 (Tex. App. – Texarkana, 1998) and *Neal v. Dow Agrosciences LLC*, 74 S.W.3d 468, 472 (Tex. App. – Dallas, 2002). "General causation is whether a substance is capable of causing a particular injury or condition in the general population, while specific causation is whether a substance caused a particular individual's injury." *Merrell Dow Pharmaceuticals, Inc. v. Havner*, 953 S.W.2d 706, 714 & 715 (Tex. 1995). The First District Court of Appeals found that Smith did not have evidence of general causation because Dr. Friedman's opinion was not reliable. The *Curtis* opinion stands for the proposition that MSDS may be combined with scientific studies to form the basis of a general causation opinion. However, Smith seeks a ruling from this court that MSDS, simply because they are required by Occupational Safety & Health Administration (OSHA), are sufficient by themselves to support a general causation opinion. As the court will appreciate, the purpose and less than stringent requirements of MSDS make such a holding unwise.

MSDS are prepared by chemical manufacturers, importers and employers. 29 C.F.R. § 1910.1200(d)(2). These groups are required to examine scientific data and make a hazard determination of the chemicals included in the product. As can be expected, Federal Regulations are

not always followed. "The practitioner may find when contacting the manufacturer that the actual ingredients that are causing the patient's symptoms may not have been listed on the MSDS because they either constituted less than 1% of the product or the information on the chemicals was not disclosed because of trade secrets." (Appendix 4, App. 15).[2] Not surprisingly, the MSDS author has not always prepared a complete analysis. An understanding of the bias and interests of the author leads to the clear conclusion that MSDS are not a reliable source of information for making scientific determinations of causation.

OSHA requires chemical manufacturers to make a health hazard determination and issue a MSDS based upon this determination. 29 C.F.R. § 1910.1200(d)(2). The regulations give the manufacturers guidance as to what types of studies may be examined and used in making the health hazard determination in Appendix A and B which are attached to the regulations. (Appendix 2, App. 4-6 & Appendix 3, App. 9-10). In determining whether a product is a carcinogen, corrosive, highly toxic, irritant, or toxic, a chemical manufacturer is permitted to examine and **base** this determination on a single *animal* study. (Appendix 2, App. 4-6 & Appendix 3, App. 9-10). The courts of the State of Texas are very skeptical of animal studies. "[T]hus, it would be fair to say that animal studies, standing alone, are not likely to support a finding of causation." *Minnesota Mining & Manufacturing Co. v. Atterbury*, 978 S.W.2d 183, 199 (Tex. App. – Texarkana, 1998).

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[2] Appendix 4 was attached as Appendix G6 to Smith's Petition to the Texas Supreme Court.

Here, OSHA has permitted chemical manufacturers to make hazard determinations, which form the content of MSDS, based solely upon studies performed on rats and rabbits. The Texas Supreme Court in *Merrell Dow Pharmaceuticals, Inc. v. Havner*, 953 S.W.2d 706 (Tex. 1997) found that proper scientific methodology would not rely solely on studies based upon animals, including rats and rabbits, as conclusive evidence that a substance is harmful to humans. *Ibid.*, 728-729. The Fifth Circuit made clear that a lack of knowledge of the tests conducted by the MSDS author substantially limits the value of an opinion based upon that MSDS. *Moore v. Ashland Chemical, Inc.*, 151 F.3d 269, 278 (5th Cir. 1998). Here, Smith has not provided any evidence of what studies were relied on in authoring the applicable MSDS.

In a letter from the Assistant Secretary of OSHA, Joseph A. Dear to Senator Daniel R. Inouye dated January 18, 1995, Mr. Dear sets forth the purpose of MSDS. Notably absent from these purposes is to support legal theories of causation in a court of law. (Appendix 5, App. 20-21).[3] There is nothing wrong with the use of animal studies in the context of MSDS when one understands that the MSDS' purpose is to warn employees of the *potential hazards of chemicals*. 29 C.F.R. § 1910.1200(a)(2). The purpose of the legal system is different. "[T]he law must balance the need to compensate those who have been injured by the wrongful actions of another with the concept deeply imbedded in our jurisprudence that a defendant cannot be found liable for an injury unless the preponderance of the evidence supports cause in fact." *Merrell Dow Pharmaceuticals, Inc.*

[3] Appendix 5 was attached as Appendix G2 to Smith's Petition for Review with the Texas Supreme Court.

v. Havner, 953 S.W.2d 706, 718 (Tex. 1995). After examining the purpose of MSDS as compared to the requirements in a court of law, the First District Court of Appeals and other courts' ruling that MSDS, by themselves, are not a reliable basis for expert testimony on causation are based on sound legal reasoning.

VI. The record presented to the lower courts of appeal is not sufficient to determine the reliability of the specific MSDS at issue.

Even if this court found that MSDS could be reliable scientific evidence by themselves, the MSDS referenced in Dr. Friedman's opinion were never made a part of the record. They were not introduced into evidence and only partial portions were presented when Dr. Friedman's deposition was read at trial. As is clear by the exemplar MSDS in the text entitled Occupation Medicine (Appendix 6, App. 27),[4] the language of the MSDS may only half heartedly support Dr. Friedman's opinions. In particular this MSDS reads, "Effects of Overexposure: Non-specific. Severe eye injury can occur. 'Skin irritation may occur when handling finely grounded material.'" (Appendix 6, App. 27). See also *Ferrell v. McDonald's Corp.*, 2002 Tex. App. Lexis 5954 (Tex. App. – Dallas, 2002) n. 3 (MSDS read to state, "could cause" and "generally aggravate" certain conditions.). Even if the court finds that MSDS are a reliable basis for a causational scientific opinion, Smith has failed to present the MSDS at issue in order to examine their basis or even how certain the MSDS state that RADS can be caused by

[4] Appendix 6 was attached as Appendix G5 to Smith's Petition for Review to the Texas Supreme Court.

the exposure to the household cleaners at issue. As a result, the court will not have a sufficient record before it to determine whether the MSDS relied upon by Dr. Gary Friedman even supports his conclusions.

CONCLUSION

Wesley Smith has failed to establish that the United States Supreme Court should grant his Petition for Writ of Certiorari. He has not established a "real and embarrassing" conflict between the Federal Circuit Courts and a State Court of Last Resort since the Texas Supreme Court denied the petition for review. There is not an important issue of federal law involved as no one outside Houston, Texas has complained about the First District Court of Appeals' opinion, an opinion which merely followed precedent from a 1998 Federal Fifth Circuit Court of Appeals and the en banc opinion of the First District Court of Appeals. The alleged uproar has been manufactured and could be easily cured if Dr. Snodgrass and the Houston Hazardous Materials Response Team were advised that MSDS are reliable for their uses, just not reliable by themselves to establish causation in a court of law. It is also clear that MSDS, due to the method by which they are published and their purpose, are not trustworthy and their conclusions cannot be tested. Finally, the issue can never be properly addressed on appeal because Smith has failed to preserve for review the actual MSDS that Dr. Friedman relied upon.

For the foregoing reasons, the United States Supreme Court should deny Wesley Smith's Petition for Writ of Certiorari.

Respectfully submitted,

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APPENDIX 1

[SEAL] OFFICIAL NOTICE FROM
SUPREME COURT OF TEXAS
Post Office Box 12248
Austin, Texas 78711-2248

RE: Case No. 05-0264 [POSTAGE METER]
COA #: 01-02-00677-CV Jan. 27, 2006
STYLE: WESLEY SMITH
v. BROOKSHIRE BROTHERS, INC.

Today the Supreme Court of Texas denied the petition for review in the above-referenced case.

MAIL TO:

MR. WARREN THOMAS MCCOLLUM
FENLEY & BATE LLP
PO BOX 450
LUFKIN TX 75902

APPENDIX 2

U.S. Department of Labor
[SEAL] Occupational Safety & Health Administration
www.osha.gov

Regulations (Standards – 29 CFR)
Health Hazard Definitions (Mandatory) – 1910.1200 App A

- **Part Number:** 1910
- **Part Title:** Occupational Safety and Health Standards
- **Subpart:** Z
- **Subpart Title:** Toxic and Hazardous Substances
- **Standard Number:** 1910.1200 App. A
- **Title:** Health Hazard Definitions (Mandatory)

Although safety hazards related to the physical characteristics of a chemical can be objectively defined in terms of testing requirements (e.g. flammability), health hazard definitions are less precise and more subjective. Health hazards may cause measurable changes in the body – such as decreased pulmonary function. These changes are generally indicated by the occurrence of signs and symptoms in the exposed employees – such as shortness of breath, a non-measurable, subjective feeling. Employees exposed to such hazards must be apprised of both the change in body function and the signs and symptoms that may occur to signal that change.

The determination of occupational health hazards is complicated by the fact that many of the effects or signs and symptoms occur commonly in non-occupationally exposed populations, so that effects of exposure are difficult to separate from normally occurring illnesses. Occasionally, a substance causes an effect that is rarely seen in

the population at large, such as angiosarcomas caused by vinyl chloride exposure, thus making it easier to ascertain that the occupational exposure was the primary causative factor. More often, however, the effects are common, such as lung cancer. The situation is further complicated by the fact that most chemicals have not been adequately tested to determine their health hazard potential, and data do not exist to substantiate these effects.

There have been many attempts to categorize effects and to define them in various ways. Generally, the terms "acute" and "chronic" are used to delineate between effects on the basis of severity or duration. "Acute" effects usually occur rapidly as a result of short-term exposures, and are of short duration. "Chronic" effects generally occur as a result of long-term exposure, and are of long duration.

The acute effects referred to most frequently are those defined by the American National Standards Institute (ANSI) standard for Precautionary Labeling of Hazardous Industrial Chemicals (Z129.1-1988) – irritation, corrosivity, sensitization and lethal dose. Although these are important health effects, they do not adequately cover the considerable range of acute effects which may occur as a result of occupational exposure, such as, for example, narcosis.

Similarly, the term chronic effect is often used to cover only carcinogenicity, teratogenicity, and mutagenicity. These effects are obviously a concern in the workplace, but again, do not adequately cover the area of chronic effects, excluding, for example, blood dyscrasias (such as anemia), chronic bronchitis and liver atrophy.

The goal of defining precisely, in measurable terms, every possible health effect that may occur in the workplace as a

result of chemical exposures cannot realistically be accomplished. This does not negate the need for employees to be informed of such effects and protected from them. Appendix B, which is also mandatory, outlines the principles and procedures of hazard assessment.

For purposes of this section, any chemicals which meet any of the following definitions, as determined by the criteria set forth in Appendix B are health hazards. However, this is not intended to be an exclusive categorization scheme. If there are available scientific data that involve other animal species or test methods, they must also be evaluated to determine the applicability of the HCS.

1. "Carcinogen:" A chemical is considered to be a carcinogen if:

(a) It has been evaluated by the International Agency for Research on Cancer (IARC), and found to be a carcinogen or potential carcinogen; or

(b) It is listed as a carcinogen or potential carcinogen in the Annual Report on Carcinogens published by the National Toxicology Program (NTP) (latest edition); or,

(c) It is regulated by OSHA as a carcinogen.

2. "Corrosive:" A chemical that causes visible destruction of, or irreversible alterations in, living tissue by chemical action at the site of contact. For example, a chemical is considered to be corrosive if, when tested on the intact skin of albino rabbits by the method described by the U.S. Department of Transportation in appendix A to 49 CFR part 173, it destroys or changes irreversibly the structure of the tissue at the site of contact following an exposure period of four hours. This term shall not refer to action on inanimate surfaces.

3. "Highly toxic:" A chemical falling within any of the following categories:

(a) A chemical that has a median lethal dose (LD(50)) of 50 milligrams or less per kilogram of body weight when administered orally to albino rats weighing between 200 and 300 grams each.

(b) A chemical that has a median lethal dose (LD(50)) of 200 milligrams or less per kilogram of body weight when administered by continuous contact for 24 hours (or less if death occurs within 24 hours) with the bare skin of albino rabbits weighing between two and three kilograms each.

(c) A chemical that has a median lethal concentration (LC(50)) in air of 200 parts per million by volume or less of gas or vapor, or 2 milligrams per liter or less of mist, fume, or dust, when administered by continuous inhalation for one hour (or less if death occurs within one hour) to albino rats weighing between 200 and 300 grams each.

4. "Irritant:" A chemical, which is not corrosive, but which causes a reversible inflammatory effect on living tissue by chemical action at the site of contact. A chemical is a skin irritant if, when tested on the intact skin of albino rabbits by the methods of 16 CFR 1500.41 for four hours exposure or by other appropriate techniques, it results in an empirical score of five or more. A chemical is an eye irritant if so determined under the procedure listed in 16 CFR 1500.42 or other appropriate techniques.

5. "Sensitizer:" A chemical that causes a substantial proportion of exposed people or animals to develop an allergic reaction in normal tissue after repeated exposure to the chemical.

6. "Toxic." A chemical falling within any of the following categories:

(a) A chemical that has a median lethal dose (LD(50)) of more than 50 milligrams per kilogram but not more than 500 milligrams per kilogram of body weight when administered orally to albino rats weighing between 200 and 300 grams each.

(b) A chemical that has a median lethal dose (LD(50)) of more than 200 milligrams per kilogram but not more than 1,000 milligrams per kilogram of body weight when administered by continuous contact for 24 hours (or less if death occurs within 24 hours) with the bare skin of albino rabbits weighing between two and three kilograms each.

(c) A chemical that has a median lethal concentration (LC(50)) in air of more than 200 parts per million but not more than 2,000 parts per million by volume of gas or vapor, or more than two milligrams per liter but not more than 20 milligrams per liter of mist, fume, or dust, when administered by continuous inhalation for one hour (or less if death occurs within one hour) to albino rats weighing between 200 and 300 grams each.

7. "Target organ effects."

The following is a target organ categorization of effects which may occur, including examples of signs and symptoms and chemicals which have been found to cause such effects. These examples are presented to illustrate the range and diversity of effects and hazards found in the workplace, and the broad scope employers must consider in this area, but are not intended to be all-inclusive.

a. Hepatotoxins: Chemicals which produce liver damage
Signs & Symptoms: Jaundice; liver enlargement
Chemicals: Carbon tetrachloride; nitrosamines

b. Nephrotoxins: Chemicals which produce kidney damage
Signs & Symptoms: Edema; proteinuria
Chemicals: Halogenated hydrocarbons; uranium

c. Neurotoxins: Chemicals which produce their primary toxic effects on the nervous system
Signs & Symptoms: Narcosis; behavioral changes; decrease in motor functions
Chemicals: Mercury; carbon disulfide

d. Agents which act on the blood or hemato-poietic system: Decrease hemoglobin function; deprive the body tissues of oxygen
Signs & Symptoms: Cyanosis; loss of consciousness
Chemicals: Carbon monoxide; cyanides

e. Agents which damage the lung: Chemicals which irritate or damage pulmonary tissue
Signs & Symptoms: Cough; tightness in chest; shortness of breath
Chemicals: Silica; asbestos

f. Reproductive toxins: Chemicals which affect the reproductive capabilities including chromosomal damage (mutations) and effects on fetuses (teratogenesis)
Signs & Symptoms: Birth defects; sterility
Chemicals: Lead; DBCP

g. Cutaneous hazards: Chemicals which affect the dermal layer of the body
Signs & Symptoms: Defatting of the skin; rashes; irritation
Chemicals: Ketones; chlorinated compounds

h. Eye hazards: Chemicals which affect the eye or visual capacity
Signs & Symptoms: Conjunctivitis; corneal damage
Chemicals: Organic solvents; acids

APPENDIX 3

U.S. Department of Labor
[SEAL] Occupational Safety & Health Administration
www.osha.gov

Regulations (Standards – 29 CFR)
Hazard determinations (Mandatory) – 1910.1200 App B

- **Part Number:** 1910
- **Part Title:** Occupational Safety and Health Standards
- **Subpart:** Z
- **Subpart Title:** Toxic and Hazardous Substances
- **Standard Number:** 1910.1200 App. B
- **Title:** Hazard Determinations (Mandatory)

The quality of a hazard communication program is largely dependent upon the adequacy and accuracy of the hazard determination. The hazard determination requirement of this standard is performance-oriented. Chemical manufacturers, importers, and employers evaluating chemicals are not required to follow any specific methods for determining hazards, but they must be able to demonstrate that they have adequately ascertained the hazards of the chemicals produced or imported in accordance with the criteria set forth in this Appendix.

Hazard evaluation is a process which relies heavily on the professional judgment of the evaluator, particularly in the area of chronic hazards. The performance-orientation of the hazard determination does not diminish the duty of the chemical manufacturer, importer or employer to conduct a thorough evaluation, examining all relevant data and producing a scientifically defensible evaluation. For purposes of this standard, the following criteria shall

be used in making hazard determinations that meet the requirements of this standard.

1. "Carcinogenicity:" As described in paragraph (d)(4) of this section and Appendix A of this section, a determination by the National Toxicology Program, the International Agency for Research on Cancer, or OSHA that a chemical is a carcinogen or potential carcinogen will be considered conclusive evidence for purposes of this section. In addition, however, all available scientific data on carcinogenicity must be evaluated in accordance with the provisions of this Appendix and the requirements of the rule.

2. "Human data:" Where available, epidemiological studies and case reports of adverse health effects shall be considered in the evaluation.

3. "Animal data:" Human evidence of health effects in exposed populations is generally not available for the majority of chemicals produced or used in the workplace. Therefore, the available results of toxicological testing in animal populations shall be used to predict the health effects that may be experienced by exposed workers. In particular, the definitions of certain acute hazards refer to specific animal testing results (see Appendix A).

4. "Adequacy and reporting of data." The results of any studies which are designed and conducted according to established scientific principles, and which report statistically significant conclusions regarding the health effects of a chemical, shall be a sufficient basis for a hazard determination and reported on any material safety data sheet. In vitro studies alone generally do not form the basis for a definitive finding of hazard under the HCS since they have a positive or negative result rather than a statistically significant finding.

The chemical manufacturer, importer, or employer may also report the results of other scientifically valid studies which tend to refute the findings of hazard.

APPENDIX 4

OCCUPATIONAL *and* ENVIRONMENTAL RESPIRATORY DISEASE

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291 Illustrations

[LOGO] **Mosby**
St. Louis Baltimore Boston Carlsbad Chicago
Naples New York Philadelphia Portland London
Madrid Mexico City Singapore Sydney
Tokyo Toronto Wiesbaden

Steps in worksite visit for evaluation of patients

Previsit

Review industry and processes
Interview patient
Define scope and purpose of visit

Visit

Meet plant personnel
Walk through entire plant
Detailed review of patient's work area
Air monitoring

Evaluate adequacy of controls

Engineering (enclosure, process isolation, ventilation)
Administrative
Personal protective equipment

Postvisit

Review results with patient
Report (as appropriate) to employer, health authorities
Prepare recommendations and report

* * *

tion of compensability for workers' compensation purposes (see Chapter 53). In addition, a worksite visit may be needed to determine whether a worker with respiratory disease can safely work and whether special accommodations for the

individual worker need to be implemented so that he or she may be able to work (see Chapter 52). University-based occupational health clinics often incorporate worksite visits as a didactic tool in conjunction with clinic-based teaching. Finally, a worksite visit may be used to observe the patient and other workers at their tasks, to determine the hazards to which the patient and others may be exposed, to ascertain if any monitoring has been or should be conducted, and to determine the effectiveness, or lack thereof, of any controls in place. This may suggest that there are other workers at risk.

Before conducting the worksite evaluation, the industrial hygienist and health practitioners often familiarize themselves with the industry and processes to be surveyed. Company brochures may have descriptions of the industry, the processes, and the products or services produced. Useful information may also be obtained from reference books describing various work processes and common health and safety hazards associated with the industry in question.[1-3] The patient is often the best source of information. For example, he or she may describe specific tasks performed as a molder for a local nonferrous foundry, making aluminum, brass, and bronze castings for various industries. The practitioner can then research the industry in various textbooks, such as Burgess's *Recognition of Health Hazards in Industry*, to obtain a description of the foundry industry, the terminology used (e.g., coremaking, molding, shakeout, and finishing), a discussion of the various elements in the alloys (e.g., copper, zinc, and lead in brass and bronze alloys), and potential exposures one may find in this industry (heavy metals, silica, phenolic binders, etc.).[4]

Patients should be asked about chemicals used by both themselves and other workers. Reference books or computer databases, such as Medline, Toxline, or Toxnet, contain information on the toxic effects of these chemicals.[5-7] The NIOSH-Tic database is available on CD-ROM.[8] In addition to published articles, this database also contains the results of NIOSH Health Hazard Evaluations (HHEs) of various industries and may provide valuable information on health effects associated with particular exposures.

If the patient knows only the brand name of the products, the practitioners may request that the patient ask his or her employer for the material safety data sheets (MSDS, for the product(s) that are of concern. Although not always complete, the MSDS are required in the United States to list the hazardous ingredients (if >1% or >0.1% for carcinogens), the acute and chronic health effects, information regarding reactivity, explosiveness, and fire precautions, disposal information, and information regarding the use of personal protective equipment and proper ventilation. More information regarding the product may be obtained by the practitioners from the regional Poison Control Center or directly from the manufacturer's toxicologist. The practitioner may find when contacting the manufacturer that the actual ingredients that are causing the patient's symptoms may not have been listed on the MSDS because they either constituted less than 1% of the product or the information on the chemicals was not disclosed because of trade secrets. Before visiting the worksite, the patient should be interviewed in detail. In addition, the purpose and scope of the worksite visit should be defined in advance. The physical state, as well

as the chemical identity, should be ascertained. The accompanying box describes these common terms.

Physical state of agents

Dust: A suspension of solid particles in air

Mist: A suspension of liquid droplets in air

Gas: A gas phase contaminant

Vapor: A gas phase contaminant that is primarily liquid as room temperature

Fume: A solid suspension resulting from condensation of products of combustion

Fiber: A solid particle whose length:diameter ratio is high (typically 10:1, although certain regulations employ a 3:1 ratio for definition)

Aerosol: A suspension of particles in air

THE WORKSITE VISIT

The worksite visit usually begins with a meeting with plant personnel. Information collected may include the results of past medical and environmental monitoring, a review of MSDS, a review of the Occupational Safety and Health Administration (OSHA) 200 log for previous years, job descriptions for the employee, results of previous OSHA investigations, medical reports from other physicians, and any other useful information.

For manufacturing operations, the industrial hygienist attempts to follow the production process, from raw materials to finished products. The worksite survey will start at the loading dock, looking at warning labels and packaging of the raw materials, and then follow all the materials through the production process, noting all the

chemicals in use in each area. Special emphasis is given to the area in which the patient works. However, it is advisable to review the entire work process since exposures generated elsewhere in the plant may affect the patient. Areas through which the patient walks should be reviewed. In addition to regular operations, potential exposures to the patient during shutdown or maintenance periods should be assessed. Each process should be observed while in action to determine how the employees are handling the products. It is important to note what intermediate products and by-products are formed, as these may be the source of the health complaints. For example, on a site visit to a pesticide manufacturing plant, an industrial hygienist determined, based on where the individual worked on the line, that the source of his problem was a by-product produced during manufacture of the pesticide and not a reaction to the fairly inert final product. Incompatible operations in close proximity to each other should be noted. For instance, arc welding operations placed too close to a vapor degreaser containing chlorinated hydrocarbon solvents that are not properly vented may allow formation of phosgene gas.

The worksite visitors should also look at areas such as the office areas of manufacturing operations, break rooms, eating areas, bathrooms, and change rooms. Hazardous materials storage and disposal areas are also inspected for potential leaks and offgassing of hazardous materials. Maintenance operations are also inspected as there may be a greater potential during these operations than during normal operation. For example, at an auto assembly plant, it was determined that the maintenance operators cleaning the paint spray booths had the potential for much

greater exposure to the solvents from the paints than spray painters.

Housekeeping practices are also noted, as these may also produce hazardous exposures. To the extent possible, the specific patient should be assessed, since interpersonal differences in work habits exist. For example, dry-sweeping of silica containing clay in a ceramics studio of a local art school generated a significant exposure to the silica. Hydroblasting or steamcleaning may also generate contaminants.

Industrial hygienists may measure exposures with monitoring devices such as detector tubes and pumps or other direct reading instruments. Such short-term testing may be supplemented with follow-up testing for a longer period of time. Exposures may vary dramatically over the course of a day, week, or month. Therefore, it is important for the industrial hygienist to know when obtaining measurements on a site visit, or evaluating measurements taken before the visit, what the actual operating conditions are (were) on the day of sampling. It is important to determine if the workload and potential exposure are (were) lighter than normal, heavier than normal, or average. Often the greatest potential exposure of concern occurs on the swing or night shift. Monitoring during the day shift may not adequately represent the exposure of a patient who is on the other shift.

The monitoring results are compared with relevant standards, such as ACGIH threshold limit values (TLVs) or OSHA permissible exposure limits (PELs).[9,10] Often the results indicate that the levels for suspect contaminants are within the legally allowable limits. However, unusually susceptible patients may develop symptoms at these levels.

ADEQUACY OF CONTROLS

The worksite visit should also evaluate the effectiveness of methods taken to control exposure to hazards. These include engineering controls, such as enclosure of materials, isolation of processes, or ventilation; administrative controls, such as rotation of workers; and personal protective equipment, such as respirators and protective clothing. The adequacy of these measures for specific patients should be evaluated. Relatively simple methods may provide an approximate indication of the adequacy of these controls.

Local exhaust ventilation systems, such as lab fume hoods or portable exhaust ventilation for welding operations, can be evaluated with smoke tubes. Observing the direction of the smoke and how fast it is exhausted will give an indication of the effectiveness, or lack thereof, of the system. The site visitor may examine the exhaust system, checking for holes or improper modification to the ductwork, the positioning of the exhaust ducts, the frequency of filter changes, and the presence or absence of dusts on the surfaces near the exhaust system. On one site visit to a jewelry studio, an industrial hygienist noted the satin buffing wheel was not properly exhausted. There was an abundance of visible dust within the small enclosure for the machine and the filters were quite dirty. Moreover, the air was being recirculated through the filters and back into the room, rather than to the outside. Correcting this problem led to a substantial reduction in the dust generated during this operation.

APPENDIX 5

U.S. Department of Labor
[SEAL] Occupational Safety & Health Administration
www.osha.gov

Standard Interpretations
01/18/1995 – The need for Material Safety Data Sheets (MSDSs).

- **Standard Number:** 1910.1200

January 18, 1995

The Honorable Daniel R. Inouye
United States Senate
Washington, D.C. 20510

Dear Senator Inouye:

This is in further response to your letter of September 29, on behalf of your constituent, Dr. Charles T. Campbell, concerning the Occupational Safety and Health Administration's (OSHA) Hazard Communication Standard (HCS). Dr. Campbell questioned the need for Material Safety Data Sheets (MSDSs), which are required to be developed and distributed under the HCS. Please accept my apology for the delay in this response.

Employers and employees need the information contained on MSDSs to protect themselves from hazardous chemical exposures and to work safely with chemical products. The result will be a reduction in chemical source illness and injuries in the workplace. Since the HCS became effective, the use and distribution of MSDSs have proven to be an effective and efficient way to ensure that employers and employees can obtain necessary information on the hazards associated with exposure to chemicals in the workplace.

MSDSs are specified by section 1910.1200(g) of the HCS (enclosed). The MSDS lists the hazardous ingredients of a product, its physical and chemical characteristics (e.g. flammability, explosive properties), its effect on human health, the chemicals with which it can adversely react, handling precautions, the types of measures that can be used to control exposure, emergency and first aid procedures, and methods to contain a spill. When new regulatory information, such as exposure limits, or new health effects information becomes available, the MSDS must be updated to reflect it.

It should also be noted that MSDSs are only required for hazardous chemicals and only to be sent with their initial shipment and with the first shipment after a MSDS is updated. In practice, MSDSs are prepared and provided for many products that are not covered by the HCS. It is our understanding that this is being done for product liability purposes, not for compliance with any Federal regulation. In fact, MSDSs were prepared and made available by many producers prior to implementation of regulatory requirements. In addition, many customers request MSDSs on all products, whether they are hazardous or not.

This practice has also encouraged producers to provide MSDSs for non-hazardous products. While OSHA does not require or encourage this practice, we certainly do not have the authority to prohibit producers from distributing such MSDSs.

We hope this information is helpful to you. Please feel free to contact OSHA's Office of Health Compliance Assistance at (202) 219-8036 if you have any additional questions.

Sincerely,

Joseph A. Dear
Assistant Secretary

APPENDIX 6

Occupational
Medicine

THIRD EDITION

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with illustrations

[LOGO] **Mosby**

* * *

This consideration can and should transcend "typical" industrial hygiene concerns and impact on related areas.

The potential health hazards associated with the performance of typical maintenance activities (welding, abrasive blasting, solvent cleaning) can be drastically increased if the equipment is potentially contaminated with a pesticide (figs. 47-8 and 47-9). The problem is further compounded if the work is being performed by an outside contractor.

Emergency planning for fires, explosions, spills, and leaks is mandatory if employees and the surrounding community are to be protected from untoward health effects (Fig. 47-10). In this regard, a National Agricultural chemicals Association brochure, *Pre-Fire Planning and Guidelines for Handling Agricultural Chemical Fires* is very informative.[97]

Effective 24-hours-a-day security prevents the entry of unauthorized personnel, such as vandals or juveniles, into areas where chemicals are stored or handled.

Environmental aspects of occupational exposures must be considered. Air-cleaning devices should be utilized on all exhaust ventilation systems. Waste materials, including empty containers, must be permanently disposed of in an environmentally secure manner.

Employee training should be designed to influence employees to comply with appropriate work practices.

Such training should be conducted for all newly hired persons and periodically for all employees.

Training should include the following areas:

1. Qualitative and quantitative identification of materials handled (Fig. 47-11).
2. Potential risks of overexposure
3. Description of signs and symptoms that might occur
4. The importance of industrial hygiene and biologic monitoring and notification of test results
5. Description of work practice controls, including personal protective equipment (respirators, gloves, etc.)
6. First-aid and emergency training

[LOGO] VELSICOL **MATERIAL SAFETY DATA SHEET**

Revised 12/21/77 *"Essentially Similar" to U.S. Department of Labor Form, OSHA-20, Rev. May 12*

SECTION I IDENTIFICATION OF PRODUCTS	
MANUFACTURER'S NAME: Velsicol Chemical Corporation	EMERGENCY TELEPHONE NO. (312) 670-4500
ADDRESS 341 E. Ohio Street, Chicago, Illinois 60611	
TRADE NAME AND SYNONYMS BANVEL Tech. Dicamba	
CHEMICAL NAME AND SYNONYMS 2-methoxy-3, 6-dichlorobenzoic acid	
CHEMICAL FAMILY Organic herbicide	MOLECULAR FORMULA $C_8H_6C1_2O_3$

SECTION II HAZARDOUS COMPONENTS OF MIXTURES			
COMPONENTS %	THRESHOLD LIMIT VALUE	COMPONENTS %	THRESHOLD LIMIT VALUE
Technical Banvel Acute oral LD_{50} (rats) 1707 mg/kg Acute dermal LD_{50} (rabbits) 200 mg/kg Acute inhalation LD_{50}> 9.6 mg/1 (4-hour exposure) Not a skin irritant but extremely irritating and corrosive to the eye			

SECTION III PHYSICAL DATA			
BOILING POINT (°F)		SPECIFIC GRAVITY (H_2O=Y) 30°C (86°F)	1.565
VAPOR PRESSURE ([ILLEGIBLE] Hg) 100°C (212°F)	3.75 X 10	PERCENT VOLATRE BY VOLUME (%)	
VAPOR DENSITY (AIR=1)	7.64	EVAPORATION RATE (___=1)	
SOLUBILITY IN WATER	0.5%	Melting Point °F (900-100°C)	194-212
APPEARANCE AND ODOR Light tan granular solid – practically odorless.			

SECTION IV FIRE AND EXPLOSION HAZARD DATA

FLASH POINTS	FLAMMABLE UNITS BY VOLUME (%)	LOWER	UPPER
Does not flash			

FIRE EXTINGUISHING MEDIA

Fog or water spray, foam, carbon dioxide.

SPECIAL FIRE FIGHTING PROCEDURES

Wear full protective clothing, self-contained breathing apparatus. Use water spray to keep containers cool. Heat from fire can cause decomposition with the evolution of toxic and irritating fumes.

UNUSUAL FIRE AND EXPLOSION HAZARDS

SECTION V HEALTH HAZARD DATA

THRESHOLD LIMIT VALUE

Has not been established

EFFECTS OF OVEREXPOSURE

Nonspecific. Severe eye injury can occur.
"Skin irritation may occur when handling finely ground material."

EMERGENCY AND FIRST AID PROCEDURES

EYE CONTACT:	Flush with water for at least 15 minutes; get prompt medical attention.
SKIN CONTACT:	Wash with mild soap and water
INGESTION:	Induce vomiting, saline emetic; call a physician.
INHALATION:	Remove to fresh air.

SECTION VI REACTIVITY DATA

STABILITY	UNSTABLE		CONDITIONS TO AVOID
	STABLE	xx	

INCOMPATIBILITY (*Materials to avoid*)

HAZARDOUS DECOMPOSITION PRODUCTS
Thermal decomposition may yield HC1, organochloride products, carbon monoxide, carbon dioxide.

HAZARDOUS POLYMERIZATION	MAY OCCUR	CONDITIONS TO AVOID
	WILL NOT OCCUR xx	

SECTION VII SPILL OR LEAK PROCEDURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED
Contain spill, sweep and collect in drums; follow by thoroughly washing down with detergent and water. Collect washings, do not allow in drainage ditches or sewers.

WASTE DISPOSAL METHOD
Controlled incineration, designated landfill, or disposal in accordance with applicable local, state and federal regulations.

SECTION VIII SPECIAL PROTECTION INFORMATION

RESPIRATORY PROTECTION (*Specify type*)
Low levels – MESA/NIOSH-approved chemical cartridge respirator for pesticides.

VENTILATION	LOCAL EXHAUST	SPECIAL
	MECHANICAL (General)	OTHER

PROTECTIVE GLOVES
Rubber gloves or the equivalent

EYE PROTECTION
Chemical goggles.

OTHER PROTECTION EQUIPMENT
Shower, daily change of clothing.

SECTION IX SPECIAL PRECAUTIONS

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING
Store in area away from seed fertilizers, insecticides or fungicides.

OTHER PRECAUTIONS
Treat as with any pesticide. Self-contained breathing apparatus and protective clothing should be available in case of severe fire.

The information presented herein while not guaranteed was prepared by technically knowledgeable personnel and to the best of our knowledge is true and accurate. It is not intended to be all inclusive and the means and conditions of use and handling may involve other or additional consideration.

Fig. 47-11. A sample material safety data sheet, which has widespread use throughout industry.